

WHAT IS CLAIMED Is;

1. A picture information converting apparatus for converting interlaced scanned input compressed picture information, compressed in accordance with a first compression coding system, into progressive scanned output compressed picture information, compressed in accordance with a second compression coding system, comprising:

synthesis means for synthesizing second activity information of a pixel block constituting a frame of said output compressed picture information using first activity information constituting a frame of said input compressed picture information; and

encoding means for encoding using said second activity information as a parameter of adaptive quantization at a time of compression in said second compression encoding system.

2. The picture information converting apparatus according to claim 1 wherein said first activity information is quantization scale information allocated to each pixel block of said input compressed picture information.

3. The picture information converting apparatus according to claim 1 wherein said first activity information is code volume allocated to each pixel block of said input compressed picture information.

4. The picture information converting apparatus according to claim 1 wherein said first activity information is the code volume allocated to DCT coefficients of each pixel block of said input compressed picture information.

5. The picture information converting apparatus according to claim 1 wherein said

first activity information is the code volume allocated to each pixel block of luminance components of said input compressed picture information.

6. The picture information converting apparatus according to claim 1 wherein said first activity information is a parameter afforded to each pixel block of said input compressed picture information by the following equation:

$$X = Q \cdot B.$$

where  $Q$  is the quantization scale allocated to each block,  $B$  is allocated code volume and  $X$  is the parameter.

7. The picture information converting apparatus according to claim 6 wherein said allocated code volume is the code volume allocated to each pixel block of said input compressed picture information.

8. The picture information converting apparatus according to claim 6 wherein said allocated code volume is the code volume allocated to the DCT coefficients of each pixel block of said input compressed picture information.

9. The picture information converting apparatus according to claim 6 wherein said allocated code volume is the DCT coefficients of the luminance components of each pixel block of said input compressed picture information.

10. The picture information converting apparatus according to claim 1 wherein said first activity information is non-zero DCT coefficients in said input compressed picture information.

11. The picture information converting apparatus according to claim 1 wherein said

first activity information is the DCT coefficients of non-zero luminance components in said input compressed picture information.

12. The picture information converting apparatus according to claim 1 wherein said synthesis means synthesizes the second activity information from one pixel block in said output compressed picture information to another using an average value of the first activity information from one pixel block in said input compressed picture information to another.

13. The picture information converting apparatus according to claim 1 wherein said synthesis means synthesizes the second activity information from one pixel block in said output compressed picture information to another using a minimum value of the first activity information from one pixel block in said input compressed picture information to another.

14. The picture information converting apparatus according to claim 1 wherein said first compression encoding system is MPEG2, and said second compression encoding system is MPEG4, and said synthesis means calculates the first activity information from one pixel block to another and also calculates an average value of said first activity information over an entire VOP corresponding to a picture of said output compressed picture information.

15. The picture information converting apparatus according to claim 14 wherein normalized activity is calculated in accordance with a following equation:

$$Nact_j = \frac{2 \times Act_j + Avg\_act}{Act_j + 2 \times Avg\_act}$$

where  $Act_j$  is the first activity information of a  $j$ th pixel block,  $Avg\_act$  is an average value of the first activity information over the entire VOP and  $Nact_j$  is the normalized activity of the  $j$ th pixel block.

16. The picture information converting apparatus according to claim 1 wherein said first compression encoding system is MPEG2 and said second compression encoding system is MPEG4 and wherein a delay buffer is provided for delaying the input compressed picture information for a period corresponding to a VOP equivalent to a picture of said output compressed picture information.

17. The picture information converting apparatus according to claim 1, further comprising picture analysis means for extracting the first activity information for one frame in said input compressed picture information and delaying said input compressed picture information for one frame period.

18. A picture information converting method for converting interlaced scanned input compressed picture information, compressed in accordance with a first compression coding system, into progressive scanned output compressed picture information, compressed in accordance with a second compression coding system, comprising the steps of:

synthesizing second activity information of a pixel block constituting a frame

of said output compressed picture information using first activity information constituting a frame of said input compressed picture information; and

encoding using said second activity information as a parameter of adaptive quantization at a time of compression in said second compression encoding system.

19. The picture information converting method according to claim 18 wherein the second activity information from one pixel block in said output compressed picture information to another is synthesized by using an average value of the first activity information from one pixel block in said input compressed picture information to another.

20. The picture information converting method according to claim 18 wherein the second activity information from one pixel block in said output compressed picture information to another is synthesized by using a minimum value of the first activity information from one pixel block in said input compressed picture information to another.

21. The picture information converting method according to claim 18, further comprising the step of extracting the first activity information for one frame in said input compressed picture information and delaying said input compressed picture information for one frame period.